WHAT IS CLAIMED IS:

1. A purge air flow passage structure for introducing purge air to a space at or near a surface of a light receiving part of an optical probe that detects radiation light of an object, comprising:

an air flow passage for ventilating the purge air;

a separation space that is provided in the air flow passage and separates dust in the purge air therefrom; and

a filter that is provided in the air flow passage, is located upstream of the separation space, and collects dust in the purge air.

2. The purge air flow passage structure according to claim 1,

wherein the filter includes two or more shielding parts each of which has a plurality of passing holes or slits formed in a width direction thereof,

the shielding parts are successively arranged along a direction from an upstream side to a downstream side in the air flow passage to be separated from each other by a predetermined distance, and

each of the shielding parts includes a wall portion facing upstream that is positioned such that the wall portion is struck by the purge air that passed through the passing hole or slit of the neighboring upstream shielding part.

3. The purge air flow passage structure according to claim 2, structured such that flow velocity ratio Vb/Va is within a range from 0.8 to 1.3 when Va is flow velocity of the purge air passing an exit of a penetration hole provided at an upstream part in the separation space to introduce the purge air from the separation space to the space at or near the surface of the light receiving part, and Vb is flow velocity of the purge air passing an exit of the passing hole or slit of the most upstream shielding part.